

TM 1301 – THERMOACIDURANS AGAR

INTENDED USE

For isolation of *Bacillus thermoacidurans* from foods.

PRODUCT SUMMARY AND EXPLANATION

Bacillus coagulans is commonly found in soil and has been isolated from canned tomato products and dairy products. This organism is responsible for flat-sour spoilage of canned foods. *B. coagulans* is also referred to as *B. thermoacidurans*. They are of primary importance in spoilage of low-acid foods packed in hermetically sealed containers. Spoilage due to bacterial growth is accompanied by a reduction in pH from 0.3 to 0.5 and also the ends of the can remain flat. Thermoacidurans Agar, described by Stern et al is recommended by APHA for cultivation and isolation of *B. coagulans* from canned foods. *B. coagulans* is described as a facultative thermophile, that can grow at 20 to 55°C, and can also grow at pH levels between 5.0 to 7.0. *B. stereothermophilus* can also grow at 55°C but it cannot tolerate a pH value of 5.0 and therefore will not grow on Thermoacidurans Agar.

Extract juice from the canned foods and subject it to heat shock. Transfer 1 ml of the heat shocked sample to 4 sterile Petri plates and to each of 2 plates, add 10-20 ml Dextrose Tryptone Agar and to the other 2 plates, add 10-20 ml Thermoacidurans Agar. *B. coagulans* will form large, cream to white colonies.

COMPOSITION

Ingredients	Gms / Ltr
Proteose peptone	5.000
Yeast extract	5.000
Dextrose (Glucose)	5.000
Dipotassium hydrogen phosphate	4.000
Agar	20.000

PRINCIPLE

Proteose peptone and yeast extract provide nitrogenous compounds, vitamin B complex and other essential growth nutrients. Dipotassium hydrogen phosphate buffers the medium. Dextrose acts as an energy source.

INSTRUCTION FOR USE

- Dissolve 39 grams in 1000 ml purified / distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.
- Cool to 45-50°C and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder	: Cream to yellow homogeneous free flowing powder.
Appearance of prepared medium	: Yellow coloured clear to slightly opalescent gel forms in Petri plates.
pH (at 25°C)	: 5.0±0.2

INTERPRETATION

Cultural characteristics observed after incubation.



Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Incubation Temperature	Incubation Period
<i>Bacillus thermoacidurans</i>	8038	50-100	Luxuriant	>=70%	55°C	18-48 Hours

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1. Becker M. E., Pederson C. S., 1950, J. Bacteriol., 459:717
2. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
3. Stern R. N., Hegarty C. P. and Williams O. B., 1942, Food Research, 7:186.

 Good Manufacturing Practices Certified	 Best Before	 Quantity	 Catalogue Number	 Manufacturer
 Temperature Unit	 Lot / Batch Number	 Consults Instructions for Use	 QR Code	

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**
Revision: 08 Nov., 2019